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The Graphic Sex Project:
A Creative Tool for Self-Reflection, Communication, and Research

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Abstract

The Graphic Sex Project is a public art installation where participants make graphs of a good sexual experience using colored cubes. The goal of the project is to give people a way to reflect on and communicate their sexual desires and values, as well as showcase and normalize the wide variety of human sexual behaviors through a display of participant-made graphs. Here we describe the Graphic Sex Project and the results of a preliminary quantitative analysis. Our findings support the potential application of the Graphic Sex Project toward research into sexual desires and preferences, as well as a tool for therapeutic settings.

Introduction

The Graphic Sex Project (GSP) is an interactive public art installation developed by J.B., one of the authors of this manuscript, that prompts people to visually depict what they consider a good sexual experience using colored cubes to represent different sexual activities. Participants are instructed to create a legend of activities, and arrange the cubes graphically in order of activity, using more cubes to represent proportionally more time spent on that activity. They are encouraged to share their creation with a sexual partner, as well as given the opportunity to share a picture of their graph with the GSP. Examples can be seen in Figure 1, as well as Supplemental File 1 with commentary, and at https://graphicsexproject.com/.

1 Acknowledgements: We are grateful to Ava Li, Grace Fagan, Geneva Jimreivat, Kimberly Rodriguez, and Rachel Saunders for their assistance with coding the graphs. We are also thankful to Daniel Copulsky and Edwin Welles for helpful commentary on the manuscript.
Figure 1

Sample graphs created by participants.

Note. Participants in the Graphic Sex Project are invited to create a graph depicting a good sexual experience using colored cubes. Examples clockwise from upper left: a 25-year-old female participant graphs a day of co-working with her husband, with multiple instances of “shooing away the dog”; a 53-year-old female participant charts a recent great experience with dots to expand the 10 provided colors to 15; a 20-year-old cis female participant graphs her ideal experience with “someone who cares about me” and plenty of affirmation; a 36-year-old bi-osexual participant shows how emotional stress around sex separates them from sexual fulfillment.

Sexual Self-Reflection

The GSP provides a path for exploration of sexual values and sexual scripts by giving people a way to use the creative process for individual reflection, similar to the way art therapy uses creativity to reveal feelings and perspectives that are difficult to put into words. The toy-like cubes have a playful association that intentionally de-sexualizes sex, so participants can relate to their sexual experiences from a new perspective, using different cognitive functions. The process defines and quantifies physical sexual activities, providing a representation of order and proportion that offers a unique way of looking at what the participant values and desires, and how that relates to what they typically enact.

Following this exercise in self-reflection, the participant now has a visual aid that could be used to center a conversation with a sexual partner. The process has been shown to be useful in the context of therapeutic work by a handful of therapists and educators who have used a modified version of the GSP with clients (personal communication with author).
J.B.). The cubes can help a client work through issues, such as identifying their sexual values, by quantifying particular aspects of their sexual experience.

Like other collaborative art projects, such as “Before I Die” (Chang, 2011) in which people write personal aspirations on a public chalkboard, and PostSecret (Warren 2005) in which people mail in anonymous secrets, this project inspires self-reflection and human connection. It was not originally designed as a research tool; however, we recognized that this collection could be used as a form of arts-based research. As Barone and Eisner (2012) put it in their seminal work on arts-based research, “the means through which the arts function as illuminating vehicles may find expression and utility in research activities as well as in the arts themselves” (p. 8).

**Visualizing Sexual Scripts**

The GSP was created to address the problem that communicating about sex is difficult for many people. Many couples do not fully disclose their sexual likes and dislikes (MacNeil & Byers, 2009); couples may have difficulty resolving sexual issues due to challenges in discussing sexual topics (Byers, 2005). Even in long-term and committed relationships, studies have shown people do not disclose much sexual information to partners, even though sexual disclosure is positively associated with relationship satisfaction (Coffelt & Hess, 2014; Jones, 2016).

Sexual scripts, or patterns of sexual conduct acquired through acculturation (Laumann et al., 1994), are likely to play a role in how people conceive of, act out, and communicate about their sexual desires. These so-called scripts are the societal norms and narratives that provide guidelines for sexual behaviors (Mahay et al., 2001; Sakaluk et al., 2014). People do not necessarily enact the scripts provided by their culture exactly, “making adaptations to suit their own needs” (Laumann et al., 1994, p. 6), or creating socially transgressive scripts to enhance desire (Ogas & Gaddam, 2011). In a 2004 study, Miller and Byers showed how men and women’s sexual performance scripts deviate from their ideal scripts, heavily influenced by gender stereotypes. They asked 152 heterosexual couples to report actual and ideal durations of foreplay and intercourse, as well as what they thought their partner’s desired durations were. They found both genders had significant misperceptions of partner’s ideal duration of foreplay and intercourse (Miller & Byers, 2004). Helping people see their own and their partner’s ideal sexual script with a new perspective may help them move toward better alignment of ideal scripts and performance scripts.

**Turning Art into Data**

Other studies have delved into the preferred duration of intercourse and foreplay specifically (Hunt, 1974; Kinsey et al., 1948, 1953; Laumann et al., 1994) or the duration of their last sexual event in its entirety (Denney et al., 1984), but relatively little study has gone into detailed analysis of sexual activity, order, and duration. According to Laumann and colleagues, “Studying scripts directly is difficult since it requires detailed data not only on what activities occur during a sexual encounter but also on the order in which those activities...
occur” (Laumann et al., 1994, p. 7).

Using pieces of art created as a method of self-reflection, we sought to investigate whether the creative representations in the GSP could also yield qualitative and quantitative data about participants’ sexual behavior and desires.

Analysis Strategy

First, it was clear that people used a tremendous diversity of phrases and words to describe activities, and we were curious about whether some types of activity would show more diversity of phrasing than others. Previous studies have shown that genitalia specifically have a rich variety of slang terms (Allan, 1990), and taboo topics have a strong tendency to generate slang (McArthur, 1992). We predicted that some activities would have more unique phrases used to describe them than others. For some activities, that could be simply due to individual idiosyncrasies being grouped into necessarily broad categories, such as “kink” or “socializing.” But we also thought more common or less taboo activities, like kissing, would show less diversity.

Second, we were curious about how demographics such as gender and age would influence overall graph construction as a depiction of a sexual experience. Frederick et al. (2017) found that women’s frequency of reaching orgasm was correlated with a higher variety of sexual behaviors, therefore we hypothesized that we would see gender differences in the number of different legend items used, indicating gender-linked preferences for variety. Based on studies that found that women report higher levels of self-disclosure on sexual topics than men (Byers & Demmons, 1999), we hypothesized that women would use more cubes in their graph construction, as an indicator of increased comfort with sexual topics. As for age, we predicted that age might influence overall graph construction (number of cubes used, number of legend items, ratio of sexual:non-sexual activities) and the value placed on vaginal intercourse, perhaps due to a shifting of priorities, gained practice communicating, hormonal changes, or ingrained taboos about sexuality in older people (Mroczek et al., 2013).

Finally, we wanted to know whether certain demographics would emphasize some activities over others in their graphs as a marker of increased value or preference, as denoted by the number of cubes used to represent each activity. To this end, we opted to investigate the emphasis on vaginal intercourse by heterosexual men and women. For many people, vaginal intercourse has a high priority as a sexual activity, as demonstrated by studies that show up to 60% of college students do not feel sex has happened if it is not included (Sanders & Machover Reinisch, 1999). Miller and Byers (2004) found that “men reported a significantly longer ideal duration of intercourse than did their partners” (p. 1). Based on these previous findings, we hypothesized that vaginal intercourse would be emphasized overall by both men and women, and that heterosexual men would use more cubes for vaginal intercourse than heterosexual women. In a similar vein, one study found that women placed an overall greater importance than did men on five pre- and post-coital items measured (Hughes & Kruger, 2010), so we hypothesized that we would find gender
correlated with the ratio of sexual:non-sexual legend items.

Methods

The Installation

The GSP has been installed in a variety of places, including art festivals, galleries, universities, kink events, conferences, workshops, raves, and public parks. The installation includes graph-making materials: cubes, sticker dots, markers and pens, and a template with brief instructions (Supplemental File 2). The installation also includes a display of 100 to 300, 5”x7” prints of graphs made by previous participants, curated for each event by the artist to show the diversity of graphs. Participants are instructed to include demographic information on their graph, including age, gender, and sexual orientation, though no specific format for these data are supplied to participants. No other information about participants is requested due to its limitations as a public art project as opposed to a formal research project. A request to share a picture of their creation with the GSP is posted, along with a statement that sharing the picture with the artist constitutes permission to use the image in any and all media associated with the GSP (see discussion of anonymity in Strengths and Limitations). Over a period of 4 years, 565 graphs were collected.

An online tool enables participants to create a graph online however, these graphs were not included in our study.

Coding Methods

To begin our analysis, we first placed all graphs into categories of graph-type based on their overall layouts, subject matter, or graphing strategy. We chose to use only graphs of the following graph-types: simple activities, contemporaneous activities, and mosaic (description and examples provided in Supplemental File 1). We excluded graphs from the following graph-types in order to simplify the dataset: longitudinal graphs that related change over an extended period of time, graphs depicting sex with multiple people or solitary sex, graphs that depicted some other aspect of a sexual experience besides simply the activities, graphs that had obscure meaning or were otherwise uninterpretable, and graphs where the cubes were arranged to make a picture. This left 292 graphs. We created a preliminary set of 62 “Activity Categories” (ACs, denoted in italics in this paper) based on a rough overview.

The 292 graphs were distributed to five data entry assistants, who first recorded the legend items used verbatim, the demographics, and numbers of cubes used for each legend item. Regarding the demographics, standardized demographic labels were not provided to participants, in order to allow them to self-identify however they wished. Graphs coded as woman-generated were ones that included any of the following indicators in the demographics space provided: F, female, woman, W, ♀, and lesbian. Terms also coded as women but occurring in fewer than 1% of graphs included queen, femme, fem, goddess, FT, TF, or TL. Graphs coded as generated by a man were ones that included any of the following indicators: M, male, man, and homo; and in less than 1% of the graphs, ♂, transmasc, transguy. Only three out of 292 graphs indicated non-binary or agender. Orientation demographics used, and how they were indicated included: Asexual (Asexual or ace),
Bisexual (B, Bi, or bisexual), Heterosexual (H, S, St8, Het, St, Str, or heterosexual), Lesbian (WG, L, TL, lesbian), Gay (G, homo, gay), and Queer (Q, queer, heteroflexible, pansexual, questioning).

We refined the ACs into 67 categories, adding ones we determined were necessary. We redistributed the graphs to the coders to determine to which AC each legend item in a graph belonged (ultimately, JB accomplished the initial coding on approximately 70% of the graphs). During this process, graphs were assigned a confidence rating as follows:

1 - Too many questions and ambiguity. Did not code at all.
2 - Attempted coding, but encountered ambiguity.
3 - Coded all legend items, but noted questions and judgment calls.
4 - Pretty confident, one judgment call with moderate certainty.
5 - Very confident, easy to code.

After finishing the initial round of coding, graphs rated as 3 and 4 were reviewed and discussed by the authors. Some graphs rated as 3 were updated to 4, or down-graded. We then updated the ACs based on observations during coding. For example, we created a new AC for the use of the word Foreplay due to its ubiquitous use, coupled with its ambiguity. As we began the analysis, we determined that our attempt to group sexual activities by actions performed upon either male or female genitalia was flawed: it required too many assumptions about the identities or anatomies of the participant or their referenced partner, such as “women have vaginas” or “partners of self-identified straight women have penises” which is not always true. For example, “fingers me to you” on the graph of a self-identified straight man was originally coded as the AC Manual Stimulation Of Vulva, Clitoris Or Vagina By The Graph-maker. We ultimately opted to collapse all ACs involving genital stimulation into either simply Oral Genital Stimulation or Manual Genital Stimulation. We also consolidated ACs that differentiated between the participant performing an action and the participant receiving an action, also due to levels of ambiguity. Other ACs consolidated due to ambiguity were Manual Anal Stimulation and Anal Penetration (for example “butt stuff”) and Sex Toy Use and Sex Toy Penetration. Using these 36 modified ACs, JB updated all graph coding and made the final determination of all Activity Category assignments. We have addressed the inherent bias of this approach in Strengths and Limitations.

For quantitative analysis of AC use by participants, we only used the 276 graphs with a confidence rating of 4 or 5. An example of a coded graph is provided in Figure 2.
Figure 2

Sample graph coding.

Notes. This graph was coded as follows:

- “Hygiene” - 8 cubes - Maintenance
- “Foreplay” - 5 cubes - Foreplay
- “Fingers involved” and “hands involved” - 5 cubes - Manual Stimulation of Genitals
- “Mouth time!” - 5 cubes - Oral Stimulation of Genitals
  ○ Interpreted to be oral/genital stimulation.
- “Penetration” - 15 cubes - Vaginal Intercourse
  ○ We made the assumption that “penetration” meant vaginal intercourse in the graphs of heterosexual participants.
- “F orgasm” and “M orgasm” - 3 dots - Climax

After coding the graphs, we analyzed the variety of legend items used to represent various activities. In addition to these observations, we also performed statistical analyses of some of the data. Prism (GraphPad, San Diego, CA) software was used to calculate descriptive statistics, perform statistical analyses, and visualize data.

Results

Installation Event

The installation was run 67 times at 18 locations; at 49 of these, JB was facilitating and observing. At events where JB was in attendance, it was apparent that the installation attracted attention from people who wanted to look through the graphs made by other people. Based on JB’s observations, approximately 10% of the people that stopped to look went on to
make their own graph. Participants tended to spend 10 to 15 minutes making their graph. Less than 10% of participants chose not to share their graph with the GSP, based on estimation of the collection and disposal of discarded templates of graphs not shared via text message (the primary method of collection; phone numbers were destroyed). Anecdotally, when questioned by the artist, participants expressed eagerness to share their graph with a partner and talk about it, a key goal of the GSP. Demographics of participants are listed in Table 1.

**Table 1: Participant Demographics**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Percent of Graphs</th>
<th>Orientation</th>
<th>Percent of Graphs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woman</td>
<td>61.3%</td>
<td>Heterosexual</td>
<td>39.4%</td>
</tr>
<tr>
<td>Man</td>
<td>26.4%</td>
<td>Not Determined</td>
<td>26.4%</td>
</tr>
<tr>
<td>Not Determined</td>
<td>8.90%</td>
<td>Bi-sexual</td>
<td>16.1%</td>
</tr>
<tr>
<td>Non-Binary</td>
<td>2.05%</td>
<td>Queer</td>
<td>9.6%</td>
</tr>
<tr>
<td>Genderfluid</td>
<td>0.68%</td>
<td>Gay</td>
<td>4.5%</td>
</tr>
<tr>
<td>Agender</td>
<td>0.68%</td>
<td>Lesbian</td>
<td>3.1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Asexual</td>
<td>1.0%</td>
</tr>
</tbody>
</table>

*Data are from 292 graphs with coder confidence rating 1-5

**Legend Item Variety**

We performed an initial qualitative analysis of the legend items used by participants for all 292 codable graphs. Due to the creative use of language on the part of participants, grouping legend items into ACs required some amount of interpretation by the coders, based on cultural knowledge and the limited information available in the graphs. For example, the AC *Vaginal Intercourse* was indicated by 144 distinct phrases, including “pound me with intensity,” “be inside you,” “pussy sex,” “rough doggy,” “doing it,” “him on top,” and “actual sex.” Although some of these terms could conceivably be referring to AC *Anal* or something else, they were placed into *Vaginal Intercourse* based on contextual factors, such as their use in a self-identified heterosexual person’s graph, typical language usage, and that...
they did not specify anal. We have addressed the limitations of this approach below in Strengths and Limitations.

On the initial data set of 292 graphs, some of the ACs we created showed more term variability than others, with a high number of unique legend items compared to the percent of coded graphs containing that AC (Table 2). Selected examples of high variability include:

- **BDSM/Kink** (91 phrases on 72 graphs): being denied, dominance, cutting, flogging, hair pull, I’m going to choke you, kinky play, punishment, puppy play, reward, spanking, submission, water sports, slapping
- **Social Engagement, Pre-sexual** (131 terms on 111 graphs): artistic endeavors, flirting, tell me about your day, dancing, chores, dirty text, chilling, drinks, emotional relating, event outing, hang out, dinner, try something new
- **Scene Setting** (18 phrases on 13 graphs): children stay asleep, creating a magical container, heating of bedroom, kicking the cat out of the bed, nice smells and music, setting mood, music, ritual setting
- **Emotions or Thoughts** (71 phrases on 54 graphs): yeah fuck it I got time, awkward waiting, closeness, confident joy, desire, emotional sparks, do I maybe, the bond, tantric connection, verbal validation, sigh, playfulness
- **Negotiation** (25 phrases on 20 graphs): wanna do it?, agreement on parameters, consent, debrief/evaluate, guilied into foreplay, safe word, seduction, you can put it there, you?, boundary setting, let’s do it!

Other ACs had a low degree of variability of terms, such as **Climax, Kiss & Makeout, and Physical Bonding Activities** (Table 2).
Table 2.

Number and Percent of Activity Categories in Graphs and Numbers of Unique Legend Items

<table>
<thead>
<tr>
<th>Activity Category</th>
<th>Sexual or Non-sexual</th>
<th>Percent of Graphs with Code in this AC(a)</th>
<th>Number of Graphs with Code in this AC(a)</th>
<th>Number of Unique Legend Items for this AC(b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kissing &amp; Making Out</td>
<td>Sexual</td>
<td>81.9</td>
<td>226</td>
<td>45</td>
</tr>
<tr>
<td>Vaginal Intercourse</td>
<td>Sexual</td>
<td>81.2</td>
<td>224</td>
<td>145</td>
</tr>
<tr>
<td>Oral Stimulation of Genitals</td>
<td>Sexual</td>
<td>71</td>
<td>196</td>
<td>133</td>
</tr>
<tr>
<td>Climax</td>
<td>Sexual</td>
<td>68.5</td>
<td>189</td>
<td>72</td>
</tr>
<tr>
<td>General Body Touching</td>
<td>Sexual</td>
<td>57.2</td>
<td>158</td>
<td>127</td>
</tr>
<tr>
<td>Physical Bonding Activities Post-sexual</td>
<td>Non-sexual</td>
<td>47.8</td>
<td>132</td>
<td>63</td>
</tr>
<tr>
<td>Manual Stimulation of Genitals</td>
<td>Sexual</td>
<td>41.3</td>
<td>114</td>
<td>92</td>
</tr>
<tr>
<td>Social Interaction Pre-Sexual</td>
<td>Non-sexual</td>
<td>40.2</td>
<td>111</td>
<td>131</td>
</tr>
<tr>
<td>BDSM &amp; Kink</td>
<td>Sexual</td>
<td>26.1</td>
<td>72</td>
<td>91</td>
</tr>
<tr>
<td>Maintenance &amp; Hygiene</td>
<td>Non-sexual</td>
<td>25</td>
<td>69</td>
<td>49</td>
</tr>
<tr>
<td>Physical Bonding Activities Pre-sexual</td>
<td>Non-sexual</td>
<td>23.6</td>
<td>65</td>
<td>21</td>
</tr>
<tr>
<td>Social Interaction Post-sexual</td>
<td>Non-sexual</td>
<td>22.8</td>
<td>63</td>
<td>36</td>
</tr>
<tr>
<td>Emotions, Thoughts, States of Being</td>
<td>Ambiguous</td>
<td>19.6</td>
<td>54</td>
<td>71</td>
</tr>
<tr>
<td>Oral Stimulation General Body Areas</td>
<td>Sexual</td>
<td>18.1</td>
<td>50</td>
<td>31</td>
</tr>
<tr>
<td>Anal Stimulation &amp; Intercourse</td>
<td>Sexual</td>
<td>17.4</td>
<td>48</td>
<td>33</td>
</tr>
<tr>
<td>Undress/dress</td>
<td>Ambiguous</td>
<td>15.9</td>
<td>44</td>
<td>30</td>
</tr>
<tr>
<td>Social Interaction Undefined Order</td>
<td>Non-sexual</td>
<td>15.6</td>
<td>43</td>
<td>29</td>
</tr>
<tr>
<td>Foreplay - use of specific word</td>
<td>Sexual</td>
<td>14.1</td>
<td>39</td>
<td>8</td>
</tr>
<tr>
<td>Other - Sexual</td>
<td>Sexual</td>
<td>14.1</td>
<td>39</td>
<td>35</td>
</tr>
<tr>
<td>Physical Bonding Activities Undefined Order</td>
<td>Non-sexual</td>
<td>13</td>
<td>36</td>
<td>5</td>
</tr>
<tr>
<td>Sexual Vocalization</td>
<td>Sexual</td>
<td>12.7</td>
<td>35</td>
<td>21</td>
</tr>
<tr>
<td>Nipple, Breast, Chest Stimulation</td>
<td>Sexual</td>
<td>10.9</td>
<td>30</td>
<td>25</td>
</tr>
<tr>
<td>Sex Toy Genital or Anal Stimulation</td>
<td>Sexual</td>
<td>10.5</td>
<td>29</td>
<td>26</td>
</tr>
</tbody>
</table>
Eye-gazing  Ambiguous  8  22  14
Stimulation Undefined  Sexual  8  22  21
Negotiation  Non-sexual  7.2  20  25
Other - Non-sexual or Unknown  Non-sexual  7.2  20  30
Proximity Change  Non-sexual  5.4  15  19
Scene Setting  Non-sexual  4.7  13  18
Self-Stimulation  Sexual  4.7  13  4
Genital to Body Stimulation  Sexual  2.9  8  6
Simultaneous Stimulation  Sexual  2.9  8  5
Drug use  Non-sexual  2.5  7  10
Media Consumption, Porn and other  Sexual  2.5  7  7
Genital to Genital Stimulation  Sexual  2.2  6  4

aData is from 276 graphs with coder confidence rating 4-5
bData is from 292 graphs with coder confidence rating 1-5

Cube Usage by Gender and Age

We were curious as to whether demographics such as gender and age would influence overall graph construction. For comparisons between two genders, two-tailed unpaired Student's t-tests (alpha = .05) were performed. When the total number of cubes used to make graphs was compared between men and women, we found that women used significantly more cubes in their graphs than men, in support of our prediction. Women used an average of 38.3 cubes (range: 9-112; SD: 20.25) compared to an average of 31.7 cubes for men (range: 6-116; SD: 18.13) (Figure 3A), t(254) = 2.46, p = .014.

Women also used significantly more legend items per graph (Figure 3B), with a mean of 8.23 legend items (range: 4-20; SD: 2.82) compared to 6.97 for men (range: 2-13; SD: 2.28), t(241) = 3.34, p = .001. This finding supports our hypothesis and aligns with the study by Frederick et al. (2017), which found that women’s frequency of reaching orgasm was correlated with a higher variety of sexual behaviors.

We also calculated the ratio of the total cubes in each graph used for sexual:non-sexual ACs, by both men and women, but did not find any significant difference in this ratio between women (mean ratio: 4.60 sexual to non-sexual cubes, SD: 3.81) and men (mean: 4.14; SD: 4.03), t(183) = 0.72, p = .473 (Figure 3C). The broad range of variability however, suggests gender was not the determining factor in whether a person considers a sexual
experience to begin only when the clothes come off, or when it began hours ago with dinner and a movie, or a sexy text at lunch time.

Figure 3.

Gender influences some aspects of overall graph construction.

Notes. In all panels, each data point represents an individual graph. The internal line indicates the mean and bars represent standard deviation. (A) The total number of cubes in each individual graph was counted and compared between men and women. (B) The number of unique legend items for each graph was determined and compared between men and women. (C) ACs were coded as either sexual or non-sexual, and the ratio of cubes used for each group of ACs was calculated. n = 276 graphs; ns: not significant, *p < .05; **p = .001

To investigate whether age influenced various graph characteristics, simple linear regressions were performed. There was no significant correlation between age and any of the dependent variables, including the total number of cubes used, $F(1, 250) = 1.26, p = .264, R^2 = 0.005, \beta = -0.124$, the number of legend items, $F(1, 250) = 1.68, p = .197, R^2 = 0.007, \beta = -0.0190$, the ratio of sexual:non-sexual cubes, $F(1, 192) = 0.03, p = .866, R^2 = 0.0002, \beta = -0.00391$, or the proportion of cubes used for vaginal intercourse, $F(1, 250) = 2.73, p = .0997, R^2 = 0.01, \beta = -0.116$.

Kissing, Cuddling, and Intercourse

In support of our third hypothesis that vaginal intercourse would be highly valued, the AC Vaginal Intercourse was the second most frequently mentioned in all coded graphs, just after Kissing and Making Out (Table 2). This is likely due to the high proportion of heterosexual men and women compared to non-heterosexual participants. But do heterosexual men and women value it to different degrees? Unexpectedly, we found that gender did not have an effect on the proportion of the cubes used for intercourse, $t(103) = 0.53, p = .597$ (Figure 4A). However, heterosexual women did use significantly larger proportions of cubes than men to indicate kissing, $t(103) = 2.50, p = .014$ or cuddling, $t(103) = 2.34, p = .021$ (Figures 4B, 4C), suggesting they place a higher value on those activities than do men.
Figure 4

Some activities are emphasized more by heterosexual men or women.

Notes. The proportions of cubes used for (A) intercourse, (B) kissing, or (C) cuddling were compared between heterosexual women and men. Each point represents the percentage of all cubes used for that activity in a single graph. Heterosexual women used a significantly higher percentage of cubes for kissing and cuddling in their graphs. In all plots, the internal black line indicates the mean, and error bars indicate the standard deviation. $n = 276$ graphs, ns: not significant; * $p < .05$.

Discussion

The GSP installation has provided a platform for hundreds of people to explore their sexual desires and communicate them to partners. Although the GSP was not originally designed for the purposes of quantitative research, our preliminary study supports the potential for use of this technique for sexuality research, particularly with modifications to address the limitations outlined below.

Analysis of the graphs showed that people used diverse and varied legend items. This intriguing finding points to future studies into how people conceptualize and name sexual activity and whether term variation correlates with taboo activities. We found clear differences in the relative proportions of ACs. Although negligible gender differences showed up in the proportion of cubes used to indicate vaginal intercourse compared with other activities in heterosexual participants, women used more cubes than men to represent kissing and cuddling. Women showed more variety of desired activities, but men and women had a similar ratio of sexual to non-sexual activities as a part of the sexual experience. That gender does not account for a significant portion of the wide variation in proportional preferences of intercourse highlights the importance of communication about one’s particular preferences and buttresses the usefulness of this tool for sexual communication, since relying
on gender stereotypes is ineffective, per Miller and Byers (2004).

Similarly, the fact that we found no correlation between age and the ratio of sexual:non-sexual cubes, the proportion of cubes used for vaginal intercourse, or the number of legend items has implications about making assumptions about sexual preferences based on age. Future studies could reveal if the same would be found for other demographics like orientation, race, and disability.

Though coding for activity order was outside the scope of this initial effort, there is potential for the GSP to be used in studies of preferred order of sexual activities, which may give more insight into people’s preferences and how well their ideal scripts align with their performative scripts. With a larger sample size that includes participants of more varied demographics, additional questions can be answered regarding the proportion of value that people give to various activities, especially the relative representation of various activities by demographic. Furthermore, encouraging participation by people from marginalized communities and minority sexualities will ensure that their experiences are also included and represented in the dataset.

**Strengths and Limitations**

The GSP provides a tool for participants to explore their sexuality and communicate with others about sexual preferences. Anecdotal observations by the artist at installation events seem to support the conjecture that graph creation has potential value as a conversation aid around sexual topics. Participants were encouraged to create their graphs in whatever way was most meaningful to them. The artist felt that this flexibility was important for participants to get the maximum benefit of personal introspection - it was more important that their creation was meaningful to themselves than that it was meaningful to others. However, the open-ended nature of the installation resulted in limitations which made coding and analysis challenging. We outline some of these limitations in Table 3 and propose ways these could be addressed and improved in future studies designed specifically for data gathering.
### Table 3

**Project Limitations, Consequences, and Suggested Solutions**

<table>
<thead>
<tr>
<th>Limitation</th>
<th>Consequence</th>
<th>Future Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambiguity in legend items</td>
<td>High degree of interpretation required by coder</td>
<td>Post-participation interviews with participants to clarify intention and meaning</td>
</tr>
<tr>
<td>Ambiguity in meaning of cube: time, intensity, pleasure, or something else</td>
<td>Counted only numeric number of cubes</td>
<td>Post-participation interviews with participants to clarify intention and meaning</td>
</tr>
<tr>
<td>Varied/incomplete demographic data</td>
<td>Some graphs missing some or all demographic data</td>
<td>Post-participation interviews with participants to clarify demographics</td>
</tr>
<tr>
<td></td>
<td>Ambiguity with labels used</td>
<td>Request additional demographic data from participants</td>
</tr>
<tr>
<td></td>
<td>No data on race/ethnicity, disability, and other key aspects of identity</td>
<td></td>
</tr>
<tr>
<td>Poor representation of some demographic groups</td>
<td>Current analysis limited to self-identified men and women; heterosexual people</td>
<td>Recruit underrepresented demographic groups in future installations</td>
</tr>
<tr>
<td>Coding primarily undertaken by one author</td>
<td>Unavoidable bias in interpretation of graphs</td>
<td>Each graph coded by multiple people, with areas of disagreement identified and clarified</td>
</tr>
<tr>
<td>Graphs made in context of a public art installation event</td>
<td>People may have been influenced by display of graphs at installation, or lack of privacy</td>
<td>Have people make graphs in a controlled environment</td>
</tr>
</tbody>
</table>

In addition, some demographic characteristics such as race/ethnicity and disability were not requested from participants, and therefore the dataset does not allow for analysis of these groups. These data will be important to collect at future installations, especially as the intersection of sexuality with race and/or disability are topics that have historically received far too little attention. We plan to hold future installations at events specifically geared toward diverse populations in order to collect data that is more fully representative of all identities and lived experiences.
Due to the GSP’s original intent as an art installation, not a research study, informed consent was not possible. However, names and other personal information was not collected, and the phone numbers attached to the graphs in the collection process were destroyed, ensuring the anonymity and the separation of data from identifiable individuals.

Supporting Positive Sexuality

The GSP embodies multiple dimensions of positive sexuality (Williams, Prior, & Vincent 2020; Williams, Thomas, Prior, & Walters, 2015). It promotes open, honest communication by asking participants to express their sexual desires in creative format. The invitation to make a graph of a “good sexual experience” reinforces sexuality as healthy, positive, and life-giving. The open-ended nature of the installation allows participants to define their unique sexuality in whatever way they see fit. The collection of graphs showcases the diversity of human sexual behavior. Furthermore, our analysis of these graphs adds a sex-positive investigation to a growing body of arts-based research.

Tool for Self-reflection, Communication, Therapy

More research is needed into the GSP’s efficacy as a tool for self-reflection and communication between partners. This could be accomplished through a controlled study involving graph creation combined with qualitative follow-up interviews for graph interpretation, and to understand participants’ perceptions and experience of the making of graphs, as well as their experience using their graph for communication with a partner.

The GSP’s value as a therapeutic tool in individual sessions is beginning to be realized by therapists using a modified version of the installation materials to help their client reflect on their sexual script. Social stigma, which may inhibit explicit talk about what happens in a sexual experience, creates an impediment in understanding what sexual script a client is operating under in order to move forward in the therapeutic process. This tool may help create a new pathway for therapeutic work.

Concurrent with these potentialities, the GSP as an interactive installation and workshop activity will continue to encourage sexual self-awareness and communication, by creating a playful and de-stigmatizing social/sexual public space.
References


Jones, A. C. (2016). The role of sexual communication in committed relationships. *All Graduate Theses and Dissertations*, 4994.


Out of the Shadow and Into the Light: New Data Comparing Asexual and Sexual Undergraduates

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Abstract

Drawing from a large dataset of over 13,000 college students, this research compared 75 self-identified asexual individuals with heterosexual, bisexual, and gay/lesbian undergraduates. The results revealed that asexual individuals were less likely to have engaged in sexual behaviors (oral sex, anal sex, friends with benefits, sexual intercourse, hooking up) than heterosexual, bisexual, and gay or lesbian individuals. Asexual and heterosexual individuals were similar in endorsing absolutist sexual values, having a lower willingness to cohabit, and reporting less likelihood of having masturbated. Asexual individuals were similar to other sexual minorities in being less religious and having more positive attitudes toward LGB issues. A multinomial logistic regression analysis using all the variables with significant differences at the bivariate level revealed similar findings, though asexual individuals differed most dramatically in their lower levels of sexual experience when compared to gay/lesbian individuals. Future researchers are encouraged to consider reframing asexuality as more sex positive so as to recognize diversity and empower asexual individuals.

Introduction

In recent decades, the concept of asexuality has increased in visibility and scientific legitimacy (Cerankowski & Milks, 2014). However, defining and identifying asexuality continues to be a challenge, particularly since concepts of sexual identity, sexual behavior, and sexual attraction can diverge (Foster et al., 2019; Geary et al., 2018). Most commonly, asexuality has been framed as an absence of sexual attraction to others, relatively low sexual behavior, or declaring one’s sexual identity as asexual (Gupta, 2017; Poston & Baumle, 2010). Asexuality has also been thought of as being on the low end of a sexual desire spectrum. Despite an increase in social visibility, asexual individuals generally report feeling isolated and disconnected as they struggle to relate to others who experience sexual attraction (Carrigan, 2011; Gupta, 2017).

Some scholars have suggested that America is a sex-negative society and that sexuality related concepts are frequently associated with negative connotations (Williams et al., 2016). Yet, asexuality has long been framed from a deficit or pathological perspective...
Many asexual individuals feel stigmatized and experience pressure to engage in sexual behavior (Carrigan, 2011; Gupta, 2017; Rothblum et al., 2020). This negative view fails to capture the fact that asexual individuals often see themselves as normal even though their sexual frequencies are lower when compared to heterosexual, bisexual and gay/lesbian individuals. Nevertheless, the process of asexual self-definition is frequently unique and challenging (Foster et al., 2019), and merely recruiting self-identified asexual participants may not be the ideal vehicle to conduct research on this topic (Van Houdenhove et al., 2017).

Asexuality can be conceptualized as a sexual orientation. While heterosexual and gay/lesbian individuals are attracted to other and same sex individuals, asexual individuals often report little or no sexual interest. However, in a study of 1,093 persons on the asexual spectrum, 30% of asexuals, 56% of graysexuals (the person only rarely experiences sexual attraction), and 62% of demisexuals (sexual attraction if in love) reported having had sexual intercourse (Hille et al., 2020). When asexual and graysexual individuals consented to engage in sexual behavior, their motivation was primarily to please the partner. The current study sheds light on variations in sexual behavior among asexual individuals.

Acquiring data on asexual individuals can be challenging. The few nationally-representative samples indicate that up to about 1% of populations from select Western countries identify as asexual (see Bogaert, 2004 for the United Kingdom; and Richters et al., 2014 for Australia). A national sample in the United States for which asexuality was indirectly measured resulted in a similar estimate (Poston & Baumle, 2010). Thus, generating samples with significant proportions of asexual individuals that are conducive to statistical comparisons with other groups requires special effort. The data from nationally representative samples typically lack a broad range of specific items that help investigate the unique relational and sexual lives of asexual individuals.

Convenience samples often lack comparison groups and include only a handful of asexual individuals, or have focused on only certain elements of the lives of asexual individuals, such as stigma or mental health. However, the Asexual Visibility and Education Network (AVEN) is a large sample of asexual individuals from which a number of studies have sampled, but such research is limited by a significant reliance on snowball sampling and includes no comparison groups. In light of such sampling challenges, much of the research on asexuality is qualitative and focuses on the lived experiences of coming to terms with and navigating one’s sexual self. In short, various efforts to analyze and compare asexual individuals have faced multiple tradeoffs as they balance their unique shortcomings with their distinct contributions that collectively add to an understanding of this frequently overlooked population.

The current study included a unique approach by assembling data from a substantive number of asexual individuals. Though not a national sample, the strength of this approach allowed for statistical comparisons with other sexual orientations. The focus of the study included variables related to relationship and sexual values, intentions, and experiences that extended beyond what has been statistically tested in prior investigations.
Asexual Individuals and Sexuality

Asexual individuals tend to share certain characteristics in regard to sexual behavior, intentions, and attitudes. As one might expect, previous data has confirmed that asexual individuals are less likely to report having experienced sex, to report less frequent sexual activity, and to report fewer sexual partners than others (Bogeart, 2004; Prause & Graham, 2007; Rothblum et al., 2020). However, it is not uncommon for asexuals to report having had sex (Ginoza et al., 2014; Rothblum et al., 2020), though some describe their experience as repulsive (Ginoza et al., 2014). Asexual individuals may also report sexual arousal and being stimulated to orgasm, usually without having associated feelings of emotional arousal or affection (Van Houdenhove et al., 2015). More typically, they experience little if any anticipation toward having sex and subsequent closeness to a partner that is common among more sexual individuals (Brotto et al., 2010). Agreement to participate in sexual behavior can be motivated by the desire to please a partner (Ginoza et al., 2014). Alternatively, sexual behavior may occur out of curiosity, especially for one’s first sexual experience (Van Houdenhove et al. 2015). Masturbation is also less common among asexual individuals and is also less likely to be associated with sexual fantasy (Brotto, et al, 2010; Yule et al., 2014).

The intersection between asexuality and gender has been noted. Past research has found asexual people are more likely to be women (Bauer et al., 2020; Bogaert, 2004; Greaves et al., 2017). This gender effect could be a manifestation of societal expectations that can minimize female sexual expression and elevate male sexual expression (Rothblum et al., 2020). In regard to thoughts toward sexuality, in one study, asexual women evidenced higher rates of sexually conservative beliefs and negative beliefs about aging and sexuality compared to other women; asexual men reported more conservative beliefs and were more likely to believe in gendered sexual stereotypes compared to other men (Carvalho et al., 2017). Such sexual beliefs have coincided with a tendency in some studies for asexual individuals to report being more religious that other groups (Bogaert, 2004; Poston & Baumle, 2010), though research on this association is inconsistent (Aicken et al., 2013). The current study investigated similar associations and beliefs while analyzing other relational and sexual variables (e.g., defining sex, hooking up) to expand scientific knowledge about the undergraduate asexual population.

There is also ambiguity about whether asexuality is an orientation similar to other sexual minorities. Some asexual individuals have reported that they initially thought they might be gay because of no sexual attraction toward the other sex, but eventually identified themselves as asexual once they learned more about this concept/orientation (Mitchell & Hunnicutt, 2018). Other individuals sometimes assumed asexual individuals were gay and even questioned the reality of the concept of asexuality (Mitchell & Hunnicutt, 2018).

Asexual individuals commonly feel an affiliation with the larger LGBTQ community (Rothblum et al., 2020) and, therefore, could share similar values and perspectives and have generally sympathetic views toward LGBTQ issues. However, some asexual individuals have reported feeling excluded by this community (Ginoza et al., 2014) which has resulted in them feeling less sympathetic. Some research also indicates a greater propensity for asexual individuals to report being non-binary or gender fluid (MacNeela & Murphy, 2015; Rothblum et al., 2020). A non-binary orientation could contribute to more openness toward diverse forms of
sexual identity and expression (Chasin, 2011). In short, consensus is lacking as to whether asexual individuals belong to a specific orientation and how they fit within conventional classifications of sexuality and gender, at least for some cases (or subsets of asexual individuals).

Sexual attraction and desire, however, are only part of the identity equation. Though less likely to be in a romantic relationship (Bogaert, 2013; Broto et al., 2010), it is common for asexual individuals to report some romantic attraction and to desire a romantic (yet nonsexual) relationship (Ginoza et al., 2014; Gupta, 2017). Conversely, some individuals, including those who identify as asexual, report having no romantic feelings toward others regardless of whether they engage in a sexual relationship (Antonsen et al., 2020). Some asexual individuals report having romantic attraction toward same sex individuals while others report attraction toward different sex individuals (Ginoza et al., 2014). Scholars have argued that some level of independent functioning of romantic and sexual attractions exists, suggesting that the targets for both attractions do not always align (Diamond, 2003; Scherrer, 2010); this creates some ambiguity about sexual orientation, or at least suggests a general oversimplification of how we tend to categorize people.

An important consideration in research on potentially unique aspects of asexual individuals is the group to which they are compared. Sometimes asexual individuals have been compared with all sexual individuals as a single group, sometimes they have been compared with straight individuals, and sometimes with other sexual minorities. The current study compared undergraduate asexual individuals with three groups: those who identified as heterosexual, those who identified as bisexual, and those who identified as either gay or lesbian. Thus, in addition to investigating a wider array of relational and sexual behavior, values, and intentions variables for asexual individuals, the current study focused on the overarching question as to the unique characteristics of these asexual individuals as a group.

Consistent with previous research, it was expected that asexual individuals in this sample would report less sexual experience. The rest of the associations were more exploratory. It is possible that asexual individuals have intentions, beliefs, and values that are less relationship oriented, at least compared to some sexual identity groups. However, sexual values and beliefs are influenced by the larger culture shared by those of all sexual identities, yet individuals may process them according to their personal relevance. Thus, it would not be surprising if asexual individuals were quite similar or different in such regard.

**Method**

**Participants**

The sample for this research was drawn from participants who completed the “College Student Attitudes and Behaviors Survey” (developed by the first and third authors). The survey consisted of 100 questions including sexual orientation, demographic characteristics, sexual values and behaviors. This data set has been the source of several published articles, though the exact samples used have differed depending on the study objectives (e.g., time span of sampling, age range of sample, sexual orientation—those who identified as “other” for sexual orientation may have been excluded). Over 13,000 undergraduates completed the survey from 2004 to 2019.
from two large universities in the United States, one in the Southeast and the other in the Midwest. Students at the two universities were emailed a link to an anonymous online questionnaire and asked to participate. Participants were provided no compensation. Students were oversampled from courses pertaining to marriage and family. The extended time span for the sample allowed for data to be gathered from a substantial number of individuals who identified as asexual, as well as other minority sexual identities.

Participants were categorized based on what they considered their sexual identity from the following options: heterosexual, bisexual, gay male, gay female, or other (followed by an open space for explaining “other”). Those who selected “other” and subsequently declared themselves to be “asexual” (or a comparable description such as experiencing only romantic attraction but not sexual attraction) were coded as asexual. All individuals coded as asexual or who identified as gay, lesbian, or bisexual were retained in the sample, while a comparable number of individuals who identified as heterosexual were randomly selected for comparison (using the “select cases” command in SPSS).

This survey was not designed to be particularly sensitive to assessing asexuality, hence “asexual” was not offered as an option, nor were students able to select multiple identities. Some research suggests that listing “asexual” as an option can identify individuals who might be overlooked when only given the option to write in their sexual identity (Prause & Graham, 2007), so it is possible that other individuals with low sexual attraction were classified differently. Furthermore, those who identified as asexual might be more secure and conceivably more insightful about their identity by virtue of assigning it a specific label, thus possibly representing a subset of asexual individuals who might be distinct from a broader group of individuals.

The total sample included 2,631 undergraduates (76.1% female and 23.9% male). The racial identity was predominately white (81.4%) with approximately two-thirds being first- or second-year undergraduates. Just over half of the participants (56.7%) were emotionally involved or in a romantic relationship with one person, 34.6% were not dating, and 8.7% were casually dating. Sexual identity groups consisted of the following numbers of participants: 1,193 identified as heterosexual, 1,004 identified as bisexual, 432 identified as gay or lesbian, and 75 identified as asexual. Sexual identities were not split by gender to avoid dividing up the modestly-sized group of asexual individuals, 81% of which identified as female and the rest as male.

Measures

Background variables

Background variables were coded for the participants, including the four types of sexual identity (heterosexual, bisexual, gay/lesbian, and asexual), sex (male, female) and race (White, Black, Hispanic, other). Current relationship status (e.g., not dating or involved with anyone, casually dating more than one person, emotionally involved with one person) was dichotomized to “in a relationship” and “not in a relationship.” Being religious consisted of a single item on a 5-point Likert scale ranging from “not at all religious” to “very religious.”
**Relationship perspectives and intentions**

Several survey items were created to capture beliefs and intentions related to love and relationships. The following items were responded to with a 5-point agreement scale (1=strongly disagree, 5=strongly agree): “I am a jealous person” and “I would live with a partner I was not married to.” Sexual values were assessed by an item in which respondents chose one of three choices: “The sexual value which best describes me is…” Options were, “absolutism - intercourse before marriage is wrong,” “relativism - if you are in a loving relationship, intercourse is ok even if not married,” and “hedonism - if it feels good, do it - being in love or being married don’t matter.” An additional dichotomous variable (dummy coded, 1=yes, 0=no) was as follows: “If I ‘hooked up’ with the right person and felt good about our interaction, I could have sexual intercourse, cunnilingus or fellatio the first time I met someone.”

**Beliefs and behaviors related to sexuality**

A dichotomous variable (dummy coded, 1=yes, 0=no) was as follows “Having sex is having sexual intercourse, not having oral sex.” Three items were created that focused on sexual identity issues (5-point agreement scales, 1=strongly disagree, 5=strongly agree). The first addressed the belief that children raised by a same-sex couple would more likely become gay; the second was about being comfortable when around someone who is gay; the third was the belief that it is better to be straight than gay. Seven dichotomous items (no/yes) focused on sexual behavior, namely whether the participant had “hooked up (sex upon first time meeting each other),” been in a “friends with benefits” relationship, masturbated, given oral sex, received oral sex, had anal sex, and had “intercourse (penis in vagina).”

**Results**

**Unique Characteristics**

To explore the scope of variation within these asexual undergraduates and to test for their unique characteristics, univariate tests were conducted for each variable (see Table 1). Chi square analysis and t-tests revealed that on background variables the groups did not differ by race or age, but did differ by sex of respondent, with the gay/lesbian group having a larger proportion of males than the other groups (51% compared to about 20% in the other groups). The majority of asexual individuals (81.3 %) identified as female. The asexual respondents were less likely to be in a current relationship than the other groups but nevertheless included a substantial proportion in a relationship (37.8%). The groups differed on mean religiousness with the heterosexual group standing out as being more religious than the other groups. Regarding relationship perspectives and intentions, the asexual group stood out as being the least jealous and by far the least likely to anticipate hooking up with someone (9.3% compared to 30-55%). They were more similar to the heterosexual group in having a relatively low hedonistic sexual value system and willingness to cohabit with someone, but more similar with the bisexual and gay/lesbian group on having a relativistic sexual value (lower than for heterosexual individuals, about 50% compared to 63%).
### Table 1: Bivariate results (chi-square and t-tests) for all variables (N=2,526)

<table>
<thead>
<tr>
<th></th>
<th>Heterosexual (n = 1193)</th>
<th>Bisexual (n = 1004)</th>
<th>Gay/Lesbian (n = 432)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Background</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex (male)</td>
<td>21.5%</td>
<td>14.5%*</td>
<td>51.4%</td>
</tr>
<tr>
<td>Race (White)</td>
<td>80.7%</td>
<td>80.6%</td>
<td>84.2%</td>
</tr>
<tr>
<td>Age (M, SD)</td>
<td>19.94 (3.34)</td>
<td>19.88 (2.63)</td>
<td>20.31</td>
</tr>
<tr>
<td>In a relationship</td>
<td>58.5%*</td>
<td>59.3%*</td>
<td>48.7%b</td>
</tr>
<tr>
<td>Religious (M, SD)</td>
<td>3.08 (1.27)</td>
<td>2.10* (1.16)</td>
<td>2.25*</td>
</tr>
<tr>
<td><strong>Relationship Perspectives/Intent</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jealous (M, SD)</td>
<td>3.36* (1.02)</td>
<td>3.33ab (1.22)</td>
<td>3.46*</td>
</tr>
<tr>
<td><strong>Sexual Values</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absolute</td>
<td>15.3%*</td>
<td>2.9%b</td>
<td>2.6%b</td>
</tr>
<tr>
<td>Relative</td>
<td>63.3%*</td>
<td>47.2%b</td>
<td>55.8%c</td>
</tr>
<tr>
<td>Hedonic</td>
<td>21.4%</td>
<td>49.9%</td>
<td>41.6%a</td>
</tr>
<tr>
<td>I would cohabit with a</td>
<td>78.6%*</td>
<td>94.7%b</td>
<td>97.2%b</td>
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<tr>
<td>partner</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would hook up</td>
<td>29.8%</td>
<td>51.5%*</td>
<td>54.5%*</td>
</tr>
<tr>
<td><strong>Sexual Beliefs and Experience</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agree oral sex is not sex</td>
<td>57%</td>
<td>41.8%</td>
<td>26%a</td>
</tr>
<tr>
<td>Same sex parents=gay child</td>
<td>2.41 (1.07)</td>
<td>1.59* (.82)</td>
<td>1.45b</td>
</tr>
<tr>
<td>(M, SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comfortable around gay</td>
<td>4.35 (.82)</td>
<td>4.86* (.49)</td>
<td>4.9*</td>
</tr>
<tr>
<td>person (M, SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Better to be hetero than gay</td>
<td>2.89 (1.22)</td>
<td>1.71* (.94)</td>
<td>1.72*</td>
</tr>
<tr>
<td>(M, SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have hooked up</td>
<td>24.6%</td>
<td>33.4%*</td>
<td>37.4%</td>
</tr>
<tr>
<td>I have had friends with</td>
<td>43.2%</td>
<td>52.4%a</td>
<td>51.7%a</td>
</tr>
<tr>
<td>benefits</td>
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<td></td>
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</tr>
<tr>
<td>I have masturbated</td>
<td>75.3%*</td>
<td>94.4%b</td>
<td>96%b</td>
</tr>
<tr>
<td>I have given oral sex</td>
<td>74.5%</td>
<td>80.9%a</td>
<td>81%a</td>
</tr>
<tr>
<td>I have received oral sex</td>
<td>77.1%a</td>
<td>80.7%a</td>
<td>82.5%a</td>
</tr>
<tr>
<td>I have had anal sex</td>
<td>22.4%</td>
<td>37.5%</td>
<td>46.2%</td>
</tr>
<tr>
<td>I have had vaginal</td>
<td>74.2%a</td>
<td>72.3%a</td>
<td>23.6%b</td>
</tr>
<tr>
<td>intercourse</td>
<td></td>
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</table>
Sexual Beliefs and Experience

Regarding sexual beliefs and experience, the asexual group stood out by having smaller proportions who reported having participated in sexual activity, especially having hooked up (6.7%), having had a “friends with benefits” experience (12%), giving or receiving oral sex (about 26% each), having had anal sex (4%), and having had vaginal intercourse (about 23%). Nevertheless, nearly 80% had masturbated and, as indicated above, about a quarter reported having oral sex and vaginal intercourse—thus indicating a substantial level of sexual experience for those identifying as asexual. Hooking up, friends with benefits, and anal sex were rare among these asexual respondents. Overall, the proportions for the sexual behavior variables among asexual individuals tended to be closer to the proportions for the heterosexual group than those of the bisexual and gay/lesbian groups (these latter two groups reported the highest proportions). Conversely, on issues related to defining sex (whether oral sex is considered sex), and especially attitudes related to homosexuality, the asexual group was more similar to the other sexual minority groups.

Comparing Asexual Undergraduates with Others

Regression analysis was used to account for overlapping associations among the variables as they relate to the sexuality groups. This would help identify unique associations from specific variables that would appear to be driving the differences across the sexuality groups. However, given that the grouping variable is categorical (not a scale) but not dichotomous, a multinomial logistic regression was conducted that used the asexual group as the comparison group. This analysis predicts the likelihood that someone would belong to each sexual identity group compared to the asexual group (e.g., someone in a relationship is more likely by so much to be in the heterosexual group than the asexual group; someone in a relationship is more likely by so much to be in the bisexual group than the asexual group). It does not compare every group with each group directly. This analysis is appropriate for models with dichotomous and continuous dependent variables (which is the case with the data for the current study). Only the background variables that were significant at the univariate level were included in the model (Table 2). This set of independent variables explained significant variability in group membership $[X^2 (57, N=2,526) = 1,905.2, p < .001]$. Though fewer variables statistically differed among the groups—especially the relationship perspectives/intent, the multivariate findings were similar to the univariate findings. In particular, asexual individuals stood out by being less likely to be jealous, to be less willing to hook up, and to have had a smaller variety of sexual experiences. They were generally more similar to the heterosexual group in their odds of having had various sexual experiences, especially in comparison with the gay/lesbian group. Asexual individuals were generally more similar to the bisexual and gay/lesbian groups concerning the variables about beliefs related to homosexuality.
Table: Multinomial logistic coefficients and odds ratios comparing groups to “Asexual” 
\((N = 2,526)\)

<table>
<thead>
<tr>
<th>Background</th>
<th>Heterosexual</th>
<th>Bisexual</th>
<th>Gay/Lesbian</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (male)</td>
<td>-</td>
<td>0.39</td>
<td>0.44*</td>
</tr>
<tr>
<td>In a relationship</td>
<td>0.02</td>
<td>1.02</td>
<td>0.01</td>
</tr>
<tr>
<td>Religious</td>
<td>0.25</td>
<td>1.28*</td>
<td>0.02</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Relationship Perspectives/Intent</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Jealous</td>
<td>0.11</td>
<td>1.11</td>
<td>0.09</td>
</tr>
<tr>
<td>Relative Sexual Value*</td>
<td>-</td>
<td>0.98</td>
<td>0.15</td>
</tr>
<tr>
<td>Hedonic Sexual Value</td>
<td>0.02</td>
<td>0.32</td>
<td>-</td>
</tr>
<tr>
<td>I would cohabit with a partner</td>
<td>1.15</td>
<td>0.32</td>
<td>0.38</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sexual Beliefs and Experience</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree oral sex is not sex</td>
<td>0.90</td>
<td>2.46**</td>
<td>0.39</td>
</tr>
<tr>
<td>Same sex parents=gay child</td>
<td>0.14</td>
<td>1.15</td>
<td>-</td>
</tr>
<tr>
<td>Comfortable around gay person</td>
<td>0.68</td>
<td>0.51*</td>
<td>-</td>
</tr>
</tbody>
</table>

| I have hooked up                 | 1.49 | 4.42** | 1.84 | 6.31*** | 1.70 | 5.48*** |
| I have had friends with benefits | 0.45 | 1.58 | 0.61 | 1.84 | 1.04 | 2.84* |
| I have masturbated               | - | 0.82 | 0.77 | 2.16* | 0.80 | 2.22 |
| I have given oral sex            | 0.46 | 1.58 | 0.90 | 2.45 | 1.21 | 3.36* |
| I have received oral sex         | 0.53 | 1.71 | 0.48 | 1.61 | 1.29 | 3.63* |
| I have had anal sex              | 0.76 | 2.15 | 1.35 | 3.87* | 1.83 | 6.21** |
| I have had vaginal intercourse   | 1.27 | 3.57** | 0.17 | 1.19 | - | 0.07*** |

\* \( p < .05 \), ** \( p < .01 \), *** \( p < .001 \)

*The reference category is absolute sexual value
Discussion

Asexuality, Relationships, and Sexual Experience

Asexuality has been generally overlooked in sexuality research and has been ambiguously defined. A focus on sexual behavior has been a common way of defining the term (Geary et al., 2018). The current study provided evidence of a strong connection between describing one’s self as “asexual” and reporting relatively minimal sexual experience. In the multi-variate model, asexual individuals did not differ statistically from heterosexual individuals on most sexual behavior, though the coefficients (and sizable odds ratios) trended toward the asexual individuals having less sexual experience and might have reached significance with a larger sample of asexual individuals. Similar to previous research (Ginoza et al., 2014; Rothblum et al, 2020), this research challenged any assumption that asexual individuals as a group completely abstain from sex or are sexually unresponsive. Yet, not all sexual behaviors were equally common among asexual individuals. The proportion of these asexual undergraduates who had hooked up with someone was four to five times smaller than the proportions of other individuals who had done so. Such a difference would be expected if hookups were primarily driven by sexual desire. That nearly seven percent of asexual individuals had hooked up, and over nine percent would be willing to hookup if given the opportunity, suggests that hookups may provide other functions (e.g., curiosity, potential relationship) (Freitas, 2013). Other asexual individuals might hook up out of pressure to conform to the expected cultural sexual norm during college (Reiber & Garcia, 2010).

As expected, asexual undergraduates were also disproportionately (by a factor of about four) less likely to report having had a friends with benefits experience. One possible explanation is that casual sexual behavior, such as hooking up or friends with benefits, is not highly desired by asexual individuals. Asexual individuals may choose to engage in partner sex for relationship stability (Rothblum et al., 2020) but not necessarily feel compelled to participate in sex-focused activities. With the high prevalence of casual sex among emerging adults and our society’s tendency to pathologize the absence of sexual desire and motivation, studying casual sexual behaviors through the perspective of asexuality could lend further nuance to our understanding of sexual behavior (Gupta, 2017). It is important to note that the sexual behavior measures only captured whether a behavior had occurred at least once.

While behavior is one key indicator of sexual identity, other factors such as desire, attraction, and self-identification may also distinguish asexual individuals (Geary et al, 2018; Sherrer, 2010). In the current study, the intention to hook up was much less common for these asexual undergraduates—three to five times, proportionally.

Asexual individuals also reported the lowest jealousy scores, especially compared to gay or lesbian individuals. Jealousy is often associated with sexual and reproductive threat, but it can also apply to non-sexual relationships (DeSteno et al., 2006). The sexual elements so commonly assumed about jealousy seem irrelevant to asexual individuals, which could explain the relatively lower propensity of self-reported jealousy in the sample. Additionally, the reported frequencies suggest that a smaller proportion of asexual individuals were in a relationship, which could reflect a lower interest in being in a relationship, perhaps as a means to avoid the sexual demands
of being in one. Or, it may be more difficult to find a romantic partner willing to accept a nonsexual partner. In either case, the lower proportion of asexual individuals being in a relationship could play a role in lowering an asexual individual’s potential to be jealous. It is also possible that some asexual individuals were in open relationships, yielding to other sexually active individuals to fulfill their partners, which could be interpreted more as a source of relief than a source of jealousy. However, jealousy was not absent for asexual individuals as a group. It is possible that some of these asexual undergraduates were romantically inclined (Ginoza et al., 2014) and attracted to sexual individuals, in which case they could feel especially threatened by other sexual individuals more willing to behave sexually with the partner. More nuanced measures of relationship circumstances could help clarify differences in jealousy levels between asexual individuals and other sexual individuals and variation within the asexual identity group.

Another subjective element of sexuality stood out for these asexual undergraduates, namely, whether oral sex was to be equated with “sex.” Asexual individuals were generally more likely to equate the two, especially compared to heterosexual and bisexual individuals; though in the multivariate model they were more likely to equate the two than were gay and lesbian individuals. This finding might suggest that asexual individual assign some unique meanings to sexual behavior—though perhaps that meaning could be influenced by not having engaged in sexual behavior. The absence of such behavior is likely connected to lesser desire to do so, which could be connected to meanings assigned to sexuality, indicating potential non-linear processes involving meaning, desire, and behavior. Qualitative investigations may be better suited for unraveling and interpreting such processes. Taken together, the findings of the current study support the notion that asexual individuals reported some distinctions in their behaviors, intentions, and views on some issues related to sexuality.

Identity Issues

A focus of the study was related to classifying asexuality as an identity, and more specifically, which identity, if any, is most similar or should serve as a baseline or comparison group for asexual individuals. At the bivariate level, asexual individuals clearly stood apart from the other groups on sexual experience (though at the multi-variate level there were fewer statistical differences) but were also similar to other groups in distinct ways. Asexual individuals were most similar to heterosexual individuals in three ways (endorsing absolutism, less likely to cohabit, fewer have masturbated), were most similar to bisexual individuals in two ways (less likely jealous, less likely than heterosexual but more likely than gay to think gay parents produce gay children), were most similar to gay/lesbian individuals in three ways (less likely to be in a relationship, less likely than heterosexuals but more likely than bisexuals to be hedonistic, less likely to agree that oral sex is not sex), and were most similar to both the bisexual and gay/lesbian individuals in three ways (less religious, more comfortable being around someone who is gay, less agreement that it is better to be heterosexual than gay). By tally alone, these patterns suggest that asexuality is not necessarily a facet of any other specific identity.

However, asexual individuals arguably had more in common with the other sexual minority groups, though that largely had to do with similar attitudes toward LGB issues. It is possible that a shared minority status contributed to sympathetic perspectives, or those who had a clear enough sense of their sexuality to identify as asexual had exposed themselves to more affirming
perspectives that assisted them in the identification process and that also fostered sympathy toward other sexual identities. Overall, some of the shared similarity between the asexual individual and the other sexual minority groups might also be accounted for by a subgroup of asexual individuals who experience same-sex romantic attractions and identify more with someone who is gay or lesbian (Ginoza et al., 2014). This is one example of how classifying and comparing asexuality can be particularly nuanced and challenging. Similarly, by just focusing on sexual behavior, researchers risk conflating deliberate abstinence or celibacy motivated by religious and ideological factors with sexual avoidance driven by lack of desire. Such motives are distinct and likely have different connotations for sexual intentions, meanings, and identity.

**Limitations and Future Directions**

The current study confronted challenges similar to other research on asexuality. The convenience undergraduate sample limited broad, demographic generalizability. A larger sample of asexual individuals would allow for testing gender differences that potentially intersect with sexual identity. Some attitudes and circumstances may have changed over the time span used to compose a sample of 75 asexual individuals, but dividing up such individuals to account for significant differences across time would limit statistical power and any meaningful accounting of such change. Larger samples of asexual individuals gathered in each of a series of years could illuminate cohort effects.

As noted, having clearer measures for identifying asexual individuals could also yield a more accurate categorization of groups. Though the analyses included a relatively broad array of variables related to sexuality and relationships, the variables relied on single item measures. Ideally, more comprehensive and nuanced instruments could help further explore any distinctions between asexual individuals and various sexual individuals. The current study, however, allowed for quantitatively analyzing differences across various sexual groups, which contributes to a continual convergence of various research strategies seeking to expand the relatively underrepresented sexual scholarship of asexuality.

Continued comparative research on asexuality should be deliberate about definitions, measurement, and sample recruitment. The current study suggests that simply comparing asexual individuals with sexual individuals in aggregate risks overlooking how asexual individuals uniquely differ from a variety of sexual minority groups in regard to sexual behavior and intentions. Studies might also benefit by including multiple categories of asexuality, though doing so would require especially large samples when statistical comparisons are warranted. Furthermore, as noted by an anonymous reviewer, asexuality research is primarily conducted within the context of sexuality. Studying asexual identity issues within family, educational, employment, and social leisure has the potential to add meaningful understanding to the common and unique aspects of the lives of asexual individuals.

The term asexuality was originally developed from a deficit model and implied abnormality. Indeed, asexuality has been perceived as pathology. The current study provides additional insights to understand asexual young adults’ sexual and relational experience as variation, not deficit. Future effort on reframing asexuality from a sex-positive approach may help empower individuals who have been stigmatized.
References


Submission Guidelines

We invite the submission of original manuscripts on any topics relevant to positive sexuality. We encourage submissions from diverse epistemological perspectives, and we welcome a wide range of quantitative and qualitative methodological approaches, as well as theoretical and conceptual essays. Alongside the work of scholars and students, we are interested in contributions from community, clinical, and other nonacademic professionals, especially contributions that help strengthen the connection between the study and practice of positive sexuality.

While the Journal of Positive Sexuality has a preference for shorter manuscripts (2,000–3,000 words), longer manuscripts up to 10,000 words will be considered. In preparation for submission, authors should observe the following guidelines:

- Manuscripts should have a clear sex-positive focus.
- Given the diverse readership of the journal, authors should write in a straight-forward and non-technical manner, avoiding jargon when possible. Manuscripts should be written such that they can be easily understood by scholars and professionals outside of one’s own field or discipline.
- Manuscripts should be written in a style consistent with the latest edition of the Publication Manual of the American Psychological Association (APA). Please include DOIs for all references when available. Instead of endnotes, please use footnotes when necessary.

New submissions should be emailed to submissions@journalofpositivesexuality.org, and should include the following Microsoft Word attachments:

- A title page, including: (1) the title of the manuscript; (2) names, institutional affiliations, and contact information for each author; (3) the word count of the main manuscript; (4) a statement certifying that the submission has not been previously published and/or is not currently under review elsewhere; (5) any pertinent information about the approval or regulatory process for human subjects research; (6) any acknowledgements that the authors would like to include for publication.
- A fully-blinded manuscript, including: (1) the title of the manuscript; (2) a brief abstract, 100 words or less; (3) the body of the manuscript; (4) references
- Any tables or figures should be submitted in separate files in either Microsoft Word or Microsoft Excel format.

Manuscripts will be reviewed initially by the Editor-in-Chief and/or Associate Editors. Appropriate manuscripts will then be sent out for double-blind peer review by at least two reviewers. While not always possible, the Journal of Positive Sexuality strives to return editorial decisions within two months of submission.

Editorial decisions may include acceptance, minor revisions, major revisions, or rejection. In the case of requested revisions, authors will be asked to resubmit their revised manuscripts within two months. When submitting a revised manuscript, authors will also be asked to provide a detailed response to the reviewers.

Accepted manuscripts will be copy edited, and proofs will be sent to authors for correction and approval prior to publication.

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